

REMARKS

Claims 1-51 are currently pending in this application. These claims have been disposed of as follows: Claims 4-7 have been provisionally rejected under 35 U.S.C. 101; Claims 1-3, 8-12, 34 and 37-48 have been rejected under the judicially created doctrine of obviousness-type double patenting over various claims of U.S. Patent No. 5,599,638 as set forth in the Office Action; Claims 8-12, 18, 27-30, 36, and 49-51 have been rejected under 35 U.S.C. 112 ¶2; Claims 31, 32, 35, and 50 have been rejected under 35 U.S.C. 102(b); and claims 13-26, 33 and 36 have been rejected under 35 U.S.C. 103(a). Applicants thank the Examiner for indicating allowability of Claims 27-30 (if the claims are rewritten or amended to overcome the U.S.C. 112 ¶2 rejections).

In this response, claims 4-7, 31, 32, 34, 35 and 49-51 are cancelled without prejudice.

Cancellation of claims 4-7 are in response to the provisional rejection. Claim 34 has been cancelled as it depends from cancelled claim 6.

Double-Patenting Rejections

Without any admission that the claims are in fact so obvious, Applicants file herewith a Terminal Disclaimer to obviate the nonstatutory double patenting rejection relative to claims 1-3, 37-48, 8-12, and 34. This renders the claims allowable and Applicants therefore request indication of such allowability.

Rejections under 35 U.S.C. 112

Claims 8-12, 18, 27-30, 36 and 49-51 have been rejected for various reasons set forth in the Office Action. The claims have been amended for clarification as follows: the inadvertent typographical error in Claim 36 has been corrected so that claim 36 now depends from claim 35; Claims 8, 12 and 27 have been amended to clarify that the high surface area of the particles is greater than 200 m²/g (see the specification at page 27, lines 3-5); Claim 49 has been cancelled; Claim 50 has been amended to delete the word "second," thereby correcting a typographical

error; Claims 18, 29, and 51 have been amended to include the composition name of the trademarked product which was previously used in the claims.

Applicants admit that these amendments obviate the rejections and are now allowable.

Rejections Under 102(b)

Claims 31, 32, 35 and 50 have been rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,390,603 to Kawana et al.

These claims have been cancelled without prejudice.

Rejections under 35 U.S.C. 103(a)

Claims 13, 14, 17, 19-21, 23, 25, 26, 33 and 36 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Kawana et al. in view of U.S. Patent No. 5,186,877 to Watanabe.

Dependent claims 15, 16, and 18 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Kawana et al. in view of Watanabe and further in view of U.S. Patent No. 4,478,917 to Fujita.

Dependent claims 22 and 24 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Kawana et al. in view of Watanabe and further in view of U.S. Patent No. 5,453,332 to Sakairi et al.

Kawana describes methanol fuel cells that include methanol permeable solid films. Kawana et al. discovered that layers of the ion-exchange film can suppress the volume of methanol that permeates through the films, and thereby increases the fuel utilization efficiency.

Watanabe describes a process for making electrodes that includes: impregnating catalyst particles with a solution of ion exchange resin so that the catalyst particles have a thin coating of the resin; impregnating non-catalyst particles with a solution of ion exchange resin, to form a thin layer of ion exchange resin on those particles; mixing the two types of coated particles with a hydrophobic binder to form a sheet-like catalyst layer; and then bond pressing the formed catalyst layer to an ion exchange membrane.

The Examiner asserts that Watanabe provides sufficient suggestion for using their described electrodes in a fuel cell similar to that of Kawana, and that the combination achieves Applicants' claimed invention. The Examiner relies on Watanabe's statement that "electrodes can be in perfect contact" with the ion exchange membrane... and can "contribute to the realization of a compact and high power-density cell (c.2 lines 24-36). Applicants respectfully disagree with the Examiner's contention.

Watanabe describes an electrode with ion exchange resin incorporated into the structure. However, the statement the Examiner relies upon does not provide sufficient specificity or guidance to a skilled artisan how to incorporate or retrofit such electrodes laden with ion exchange resin into the specific structure of Applicants' high performance fuel cells. A mere statement of a possibility that such electrodes can be used in fuel cells is insufficient information even to one skilled in the art. Kawana does not provide clear instructions or guidance to initiate the effort, either. Accordingly, the Examiner relies on improper hindsight for combining the two teachings. Furthermore, Watanabe fails to teach a wetting agent. Applicants respectfully assert that one of ordinary skill in the art would not have found it obvious to achieve the claimed fuel cells just by relying on a single statement of a possibility, absent clear information as to how Watanabe electrodes can be modified and incorporated into a fuel cell. Furthermore, the mere fact that Watanabe electrodes *can* be combined with a structure that may be similar to Kawana does not satisfy the requirement that a skilled artisan would have necessarily found it obvious to modify the electrode structure and design them within the constructs of a fuel cell as Applicants' claim.

In as much as there is no suggestion or teaching for combining the references proposed by the Examiner, and that such a combination even if properly made would not result in the invention as claimed, Applicant respectfully submits that the references do not support a prima facie case of obviousness under the provisions of 35 USC §103. Therefore, Applicant respectfully contends that the claims are patentably distinguishable over the prior art of record. The application is now considered to be in condition for allowance and an early indication of same as earnestly solicited.

Applicant : Surampudi et al.
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Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

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